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9th December, 1999

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Dear Larry,

**US PATENT APPLICATION 09/029,581 - JAMES
YOUR REF: 36-1116 - OUR REF: A25102/USw**

Thank you for your letter of 7th July 1999 reporting the first official action and also for your subsequent reminders. I do apologise for the delay in replying. I shall now instruct you to file a response and please pay the extension fees.

Formal Objections

Please deal with these appropriately. On page 2, the Examiner has said that there does not appear to be an abstract file with the application. There is an abstract and this is printed on the cover page of the PCT application (WO97/21177).

Patentability Argument

REJECT
The Examiner has rejected the claims as being anticipated by US patent 5,550,971 (Brunner et al). Brunner et al is not close to the invention and I think the Examiner may have made this rejection because he has not properly understood the invention.

REJECT
The invention is concerned with checking data consistency between data held in a master database and data held in a cache database. Figure 1 of the drawings shows a master database 126 and three cache databases 136. The claims are directed to the process illustrated in Figure 6 of the drawings and the row and index structure of the database shown in Figure 3c. On page 6, the structure shown in Figures 3a and 3b are acknowledged as prior art systems and the structure shown in Figure 3c is described as an embodiment of the invention. Because the process of Figure 6 is described with reference to the process of Figure 5, it is necessary to read the description of the processes of both Figures 5 and 6 in order to understand the ~~examiner~~ embodiment of the invention. These processes are described from line 21 on page 11 to line 15 on page 12.

*Note that in
Figure 3c
there is a
time stamp
TS associated
with the
index. etc*

REJECT
As set out in this passage, in the process of Figure 5, in a step 500 a client 130 transmits a query across the network to the file server 100 to read data from the file server. The query includes an identifier for the data row required and the respective time stamp. In a step 525, the file server 100 compares the time stamp of the cached data row with the time stamp of the master data row which has been requested. If the time stamps are the same, the file server sends a reply to the client 130 that the cached data is still valid. If the time stamps are different, the file server transmits the entire data row to the client 130 to update the cached database 136.

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¶ In the process of Figure 6, steps 600 to 620 are equivalent to steps 500 to 520 in Figure 5. However, in step 625, the file server 100 compares the time stamp in the index entry for the requested data row with the time stamp of the cached data row as received in the query. If the time stamps are not the same, the current requested data row from the master database is returned to the client 130 to update the cache database in step 635. If the time stamps are the same, in a step 640, the file server transmits a message to the client 130 that the cache copy is still valid.

The advantage of reading the time stamp of an index entry (rather than the time stamp of a row from the master database) is that it avoids the need to read the whole row from the master database and thus reduces the processing load on the file server.

¶ As explained at lines 18 to 34 on page 13, although time stamps are used in the example of the invention which is described with reference to Figure 6, other methods for marking data rows to enable data consistency comparison are possible. Thus, ~~the~~ claims 1 to 5 recite "keys" rather than "timestamps".

¶ Turning now to the claims, claim 1 is limited to comparing a first key stored in association with an item of data in a cached database with a second key stored in association with an index entry for the respective item of data in a master database. This same limitation ~~as is also~~ present in claim 2. A corresponding limitation also exists in claim 5. Claim 6 is directed to the database index itself and recites that the index includes "version information which changes each time the respective information in the database changes". The time stamps described in the embodiment of the invention are an example of the "version information" of claim 6.

¶ Brunner et al is directed to a method of generating a user interface or a database that is adaptable to various database systems. More specifically it is directed to the problems that are set out in lines 13 to 18 in Column 2, lines 13-18.

¶ In Figure 1, Brunner et al does show a cache database 26 as well as a remote database 12. However, there is no disclosure in Brunner et al of checking data consistency between data held in the cache database and data held in the remote database. The Examiner has drawn attention to the passage from line 53 in Column 4 to line 7 in Column 5. Although this passage does refer to the local cache database 26, there is no disclosure of checking data consistency between the two databases. The Examiner has also drawn attention to the first paragraph in Column 15. Again, although this passage does refer to the cache database, there is no disclosure of checking data consistency.

Information Disclosure Document

I regret that I have not yet sent you copies of the three documents cited in the international search report. I shall send you copies of these with the confirmation copy of this letter. Please include these in an information disclosure document.

Best regards,

Yours sincerely,

Michael Evershed

MICHAEL EVERSHED

Encs. 3 documents cited in the international search report